

Aging and technology: new trends in Brazil

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This article discusses the increase in the Brazilian population's aging rate, the economics and public policies of medical care and retirement, and points to ways in which the technology might be adapted to better fit users' present needs.

Key Words: Public health, health care

First of all we would like to present some general information about Brazil in order to give a frame. Brazil is a country with about 170,000,000 inhabitants spread in states, with a total of 5,507 municipalities.

The data that we are presenting here are those from the questionnaires of the 2,000 demographic census applied by the National Institute of Geography and statistics. This institute is a division of the planning, budget, and management ministry and the institute is in charge to project and conduct the necessary surveys to perform the Brazilian census.

In order to identify the old population in Brazil, the Brazilian National Institute of Geography and Statistics uses the criteria that establishes the aged population as those above 60 years old in the developing country and 65 years old in the developed country.

GROWTH OF THE AGED POPULATION IN BRAZIL

Considering the maintenance of the tendency of rates of fecundity and longevity to the Brazilian population, the researches point out that in the next 20 years there will be in Brazil 30 millions of aged persons, representing 13% of the Brazilian population.

The Brazilian data shows that the proportion of aged people is growing faster than the proportion of children. In 1980 there was 16

aged persons to 100 children and in 2000 this proportion is 30 aged persons to 100 children.

In the aged population, between the demographic census made in 1991 and those made in 2000, the segment that had the faster growth was those of 75 years old.

The aged people are spread along Brazil but the Rio de Janeiro city and Porto Alegre are the cities that has the higher number of them. In Rio de Janeiro they represent 12,8% of the inhabitants and in Porto Alegre they represent 11,8% of the inhabitants.

DIFFERENCES OF AGED PEOPLE BETWEEN MAN AND WOMEN

The ratio between men and women in the aged people indicates that there are more women than men. In 1991, there was 54% of women in the aged population and now in 2000 this rate is about 55,1%. In 1991 there was 100 women to 85.2 men and now in 2000 there is 100 women to 81.6 men.

The aged women in Brazil have 8 years life expectancy years more than the aged men.

NATIONAL, PUBLIC HEALTH CARE SYSTEM

A National, Public Health Care System is available. From every income of the Brazilian work force, we pay 8% to the health and

retirement system. Due to the growth of the population and the enlargement of the life expectancy, the health and retirement system is near a collapse. In order to guarantee the income to the retired people, the government is not doing the necessary investment in the health care system. Even paying a compulsory amount of the salary to support the health system, approximately 25% of the population uses some sort of private health care. The larger someone's income, the greater is the utilization of the private health care system. The lack of efficiency in Public Health Care allowed the emergence of a strong private health care system that is presently dominating the market.

We have now in Brazil a myriad of strong private health care systems. We could point out enterprises such as Bradesco, Amil, Golden Cross, Sul America Insurance. We are going to present data and analysis concerning only the Rio de Janeiro state. Those enterprises offers different kind of insurance. Some of these have his own hospital and others use the private hospital spread over the city.

In the past years, the policy adopted by these systems led to an increase in home care services in order to cut costs with hospitals. There is a lot of small enterprises in Rio de Janeiro that offers the home care service.

An advertisement of some of the enterprises says that 'We can offer you the necessary equipments to your sojourn at home during your sickness and we are able to offer you the same structure you have in a hospital'.

ERGONOMICS

From an ergonomic and production engineering point of view, we would like to study and discuss what represents to have your house transformed into a hospital. In August 2000, the IEA Council adopted an official definition of ergonomics as shown below, concerning the discipline of ergonomics.

Ergonomics (or human factors) is the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance.

Ergonomists contribute to the design and evaluation of tasks, jobs, products, environments and systems in order to make them compatible with the needs, abilities and limitations of people. The production engineering definitions says that production engineering is the branch of engineering that concepts, projects and manages the production of good and services, by the integration between men, materials, equipments and environment to the increase or productivity and quality.

By using the Ergonomic analysis of work we are going to study a real situation where you have a installation of a hospital in a private residence in order to offer the home care services.

What we would like to point out is to present the problems the users of this type of system face, from family, patients and professional points of view as well as ways of technology utilization to adapt the activities to peoples' characteristics, skills, and limitations leading to an efficient, comfortable and safe system.

CONCLUSION

We wish we can contribute with this analysis, by using the ergonomics analysis of work, through the evaluation of the tasks, to offer to the enterprises what are the scenery in the home care assistance in order to help the hospital products manufacturer to make there products compatible with the needs, abilities and limitations of people.